

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (previously presented) A wellbore apparatus comprising:
 - a) a first conduit in a wellbore, the first conduit comprising at least one three-dimensional surface defining a first fluid flow path through the wellbore within the first conduit, wherein at least one section of the first conduit surface being permeable and at least one section of the first conduit surface being impermeable, wherein the permeable section is adapted to retain particles larger than a predetermined size while allowing fluids to pass through the permeable surface;
 - b) a second conduit in the wellbore, the second conduit comprising at least one three-dimensional surface defining a second fluid flow path through the wellbore within the second conduit, wherein at least one section of the second conduit surface is permeable and at least one section of the second conduit surface being impermeable; wherein the permeable section is adapted to retain particles larger than a predetermined size while allowing fluids to pass through the permeable surface; wherein at least one permeable section of the first conduit surface is in fluid communication with at least one permeable section of the second conduit surface providing fluid communication between the first flow path and the second flow path; and
 - c) at least one wall inside the first flow path or the second flow path to form at least one compartment in the first flow path or the second flow path; wherein the compartment has at least one inlet and at least one outlet; and wherein the at least one compartment is adapted to accumulate particles in the compartment to progressively increase resistance to fluid flow through the compartment in the event the at least one inlet is impaired and allows particles larger than a predetermined size to pass into the compartment.

2. (previously presented) The apparatus of claim 1 wherein the first and second conduits are selectively perforated bascpipes.
3. (previously presented) The apparatus of claim 1 wherein the first conduit is adjacent to the second conduit in the wellbore.
4. (previously presented) The apparatus of claim 1 wherein the first conduit is concentric to the second conduit in the wellbore.
5. (previously presented) The apparatus of claim 1 wherein at least one conduit comprises joints of pipe.
6. (previously presented) The apparatus of claim 1 wherein the first conduit is eccentric to the second conduit in the wellbore.
7. (original) The apparatus of claim 5 wherein the joints of pipe are connected using flexible joints.
8. (currently amended) The apparatus of claim 1 wherein the three-dimensional surface of the first and second ~~flow joints~~ conduits are cylindrical.
9. (previously presented) The apparatus of claim 1 wherein at least one wellbore wall is utilized as a conduit.
10. (previously presented) The apparatus of claim 1 wherein at least one conduit is a sand screen.
11. (previously presented) The apparatus of claim 10 wherein the sand screen is a wire-wrapped screen and the wires of the wire-wrapped screen are wrapped at varying pitches thereby creating varying levels of permeable sections and impermeable sections.
12. (previously presented) The apparatus of claim 1 further comprising at least one shunt tube in at least one conduit.

13. (original) The apparatus of claim 1 wherein the apparatus is used for producing hydrocarbons.
14. (original) The apparatus of claim 1 wherein the apparatus is used for gravel packing a well.
15. (previously presented) The apparatus of claim 1 wherein at least one impermeable section of the first conduit or the second conduit and at least one permeable section of the first conduit or the second conduit are each at least 7.5 centimeters long.
16. (previously presented) The apparatus of claim 1 wherein at least one impermeable section of the first conduit or the second conduit and at least one permeable section of the first conduit or the second conduit are each at least 15 centimeters long.
17. (previously presented) The apparatus of claim 1 wherein at least one impermeable section of the first conduit is adjacent to at least one permeable section of a third conduit.
18. (previously presented) The apparatus of claim 1 wherein at any cross-section location of the apparatus, at least one surface of at least one conduit is impermeable.
19. (previously presented) The apparatus of claim 1 wherein at any cross-section location at least one surface of at least one conduit is impermeable and at least one surface of at least one conduit is permeable.
20. (currently amended) A wellbore apparatus comprising:
 - a) a first selectively perforated basepipe inside a wellbore defining a first fluid flow path through the wellbore within the first basepipe, with at least one section of the first selectively perforated basepipe being impermeable and at least one section of the first perforated basepipe being permeable, wherein the permeable section is adapted to retain particles larger than a predetermined size while allowing fluids to pass through the permeable surface;
 - b) a second selectively perforated basepipe inside the wellbore defining a second fluid flow path through the wellbore within the second basepipe, with at least one section of the

second selectively perforated basepipe being impermeable and at least one section of the second perforated basepipe being permeable; wherein the permeable section is adapted to retain particles larger than a predetermined size while allowing fluids to pass through the permeable surface; wherein at least one permeable section of the first basepipe is in fluid communication with at least one permeable section of the second basepipe providing fluid communication between the first flow path and the second flow path; and

c) at least one wall disposed inside the first flow path or the second flow path to form at least one compartment in the first flow path or the second flow path; wherein the compartment has at least one inlet and at least one outlet; and wherein the at least one compartment is adapted to accumulate particles in the compartment to progressively increase resistance to fluid flow through the compartment in the event the at least one inlet is impaired and allows particles larger than a predetermined size to pass into the compartment.

21. (original) The apparatus of claim 20 wherein the basepipes are concentric.
22. (original) The apparatus of claim 20 wherein the basepipes are eccentric.
23. (original) The apparatus of claim 20 wherein the basepipes are adjacent.
24. (previously presented) The apparatus of claim 21 wherein the first selectively perforated basepipe is larger than the second selectively perforated basepipe and the at least one wall is coupled between the first selectively perforated basepipe and the second selectively perforated basepipe to provide at least one additional flow path inside the first selectively perforated basepipe.
25. (previously presented) The apparatus of claim 22 wherein the first selectively perforated basepipe is larger than the second selectively perforated basepipe and the at least one wall is coupled between the first selectively perforated basepipe and the second selectively perforated basepipe to provide at least one additional flow path inside the first selectively perforated basepipe.

26. (previously presented) The apparatus of claim 20 wherein the perforations of the first selectively perforated basepipe are chosen based on the relative amount of fluids that will flow through the at least one permeable section.
27. (canceled)
28. (previously presented) The apparatus of claim 20 further comprising at least one shunt tube in the first selectively perforated basepipe or the second selectively perforated basepipe.
29. (original) The apparatus of claim 20 wherein at least three flow paths are available through the wellbore.
30. (previously presented) The apparatus of claim 23 wherein the first selectively perforated basepipe and the second selectively perforated basepipe are connected with flexible tubes.
31. (previously presented) The apparatus of claim 20 wherein at least one impermeable section of the first selectively perforated basepipe or the second selectively perforated basepipe and at least one permeable section of the first selectively perforated basepipe or the second selectively perforated basepipe are each at least 7.5 centimeters long.
32. (previously presented) The apparatus of claim 20 wherein at least one impermeable section of the first selectively perforated basepipe or the second selectively perforated basepipe and at least one permeable section of the first selectively perforated basepipe or the second selectively perforated basepipe are each at least 15 centimeters long.
33. (previously presented) The apparatus of claim 20 wherein at least one impermeable section of the first selectively perforated basepipe or the second selectively perforated basepipe is adjacent to at least one permeable section of a third selectively perforated basepipe.
34. (previously presented) The apparatus of claim 20 wherein at any cross-section location of the apparatus, at least one wall of the first selectively perforated basepipe or the second selectively perforated basepipe is impermeable.

35. (previously presented) The apparatus of claim 20 wherein at any cross-section location at least one wall of the first selectively perforated basepipe or the second selectively perforated basepipe is impermeable and at least one wall of the other one of the first selectively perforated basepipe and the second selectively perforated basepipe is permeable.

36. (previously presented) A method for completing a wellbore comprising:

a) providing a wellbore apparatus for producing hydrocarbons comprising a first conduit in a wellbore, the first conduit comprising at least one three-dimensional surface defining a first flow path through the wellbore within the first conduit, wherein at least one section of the first conduit surface is permeable and at least one section of the first conduit surface is impermeable, a second conduit in a wellbore, the second conduit comprising at least one three-dimensional surface defining a second fluid flow path through the wellbore with at least one section of the second conduit surface being permeable and at least one section of the second conduit surface being impermeable; wherein at least one permeable section of the first conduit surface is in fluid communication with at least one permeable section of the second conduit surface providing fluid communication between the first flow path and the second flow path; and at least one wall inside the first flow path or the second flow path to form at least one compartment in the first flow path or the second flow path; wherein at least one compartment is adapted to accumulate particles in the compartment to progressively increase resistance to fluid flow through the compartment in the event the at least one inlet is impaired and allows particles larger than a predetermined size to pass into the compartment; and

b) installing the wellbore apparatus in the wellbore.

37. (previously presented) The method of claim 36 wherein installing the wellbore apparatus provides at least two separate flow paths in the wellbore with at least one connection permitting fluid flow between the first flow path and the second flow path.

38. (previously presented) The method of claim 36 wherein the apparatus is used for producing hydrocarbons.

39. (previously presented) The method of claim 36 wherein the apparatus is used for gravel packing a well.

40. (original) The method of claim 36 further comprising producing hydrocarbons from the wellbore.

41. (previously presented) The method of claim 40 further comprising producing hydrocarbons from the wellbore apparatus after the first conduit or second conduit has been mechanically damaged.

42. (previously presented) The method of claim 36 further comprising disposing at least one shunt tube in at least one of the first conduit and the second conduit, and gravel packing the wellbore using the shunt tube in the first conduit or the second conduit.

43. (previously presented) The method of claim 36 wherein the first conduit or the second conduit comprises a sand screen; and further comprising installing a complete gravel pack during gravel packing operations after the sand screen has been mechanically damaged.

44. (previously presented) A method of flowing fluids in a wellbore comprising;

a) providing a wellbore with an apparatus comprising a first conduit in a wellbore, the first conduit comprising at least one three-dimensional surface defining a first flow path through the wellbore within the first conduit, wherein at least one section of the first surface is permeable and at least one section of the first conduit surface is impermeable; a second conduit in the wellbore, the second conduit comprising at least one three-dimensional surface defining a second flow path through the wellbore, wherein at least one section of the second conduit surface is permeable and at least one section of the second conduit surface is impermeable; wherein at least one permeable section of the first conduit is in fluid communication with at least one permeable section of the second conduit surface providing fluid communication between the first flow path and the second flow path; and at least one wall inside the first flow path or the second flow path to form at least one compartment in the first flow path or the second flow path; wherein the compartment has at least one inlet and at least one outlet; and wherein the at least one compartment is adapted to accumulate particles in the compartment to progressively increase

resistance to fluid flow through the compartment in the event the at least one inlet is impaired and allows particles larger than a predetermined size to pass into the compartment.

45. (previously presented) The method of claim 44 further comprising producing hydrocarbons through the first conduit or the second conduit.

46. (previously presented) The method of claim 44 further comprising injecting fluids into the well through the first conduit and the second conduit.

47. (canceled)

48. (previously presented) A wellbore apparatus comprising;

a first perforated basepipe configured to provide a first fluid flow path through a wellbore, wherein the first perforated basepipe has at least a first impermeable section and at least a first permeable section;

a second perforated basepipe configured to provide a second fluid flow path through the wellbore, wherein the second perforated basepipe has at least a second impermeable section and at least a second permeable section and the first permeable section and the second permeable section are connected to provide a flow path between the first perforated basepipe and the second perforated basepipe; and wherein the basepipes are eccentric; and

at least one baffle disposed inside the first perforated basepipe or the second perforated basepipe to provide at least one additional fluid flow path.

49-50. (canceled)

51. (previously presented) A wellbore apparatus comprising;

a first perforated basepipe configured to provide a first fluid flow path through a wellbore, wherein the first perforated basepipe has at least a first impermeable section and at least a first permeable section;

a second perforated basepipe configured to provide a second fluid flow path through the wellbore, wherein the second perforated basepipe has at least a second impermeable section and at least a second permeable section and the first permeable section and the second permeable section are connected to provide a flow path between the first perforated basepipe and the second perforated basepipe; and wherein the basepipes are adjacent; and

at least one baffle disposed inside the first perforated basepipe or the second perforated basepipe to provide at least one additional fluid flow path.

52-58. (canceled)

59. (previously presented) A wellbore apparatus comprising:

a perforated basepipe configured to provide a first fluid flow path through a wellbore, wherein the perforated basepipe has at least an impermeable section and at a permeable section;

a plurality of walls inside the perforated basepipe to provide a plurality of compartments in the first fluid flow path; and

a redundant perforated basepipe configured to provide a third fluid flow path through the wellbore, the redundant perforated basepipe comprising at least a redundant impermeable section and at least a redundant permeable section, wherein the permeable section and the redundant permeable section are in fluid communication through the compartment between the perforated basepipe and the redundant perforated basepipe; wherein the compartment is adapted accumulate particles to progressively increase resistance to fluid flow through the compartment in the event the at least one permeable section of the perforated basepipe or the redundant perforated basepipe is impaired and allows particles larger than a predetermined size to pass into the compartment.

60. (previously presented) The apparatus of claim 59 wherein the perforated basepipe comprises a sand screen.

61. (previously presented) The apparatus of claim 59 wherein the plurality of walls comprises a first wall, a second wall and a third wall, wherein each of the walls are coupled between the perforated basepipe and the first wall, second wall, third wall, or combination thereof.
62. (canceled)
63. (previously presented) The apparatus of claim 59 wherein the basepipes are concentric.
64. (previously presented) The apparatus of claim 59 wherein the basepipes are eccentric.
65. (previously presented) The apparatus of claim 59 wherein the basepipes are adjacent.
66. (previously presented) The apparatus of claim 59 wherein at least one wall of the plurality of walls redirects the fluid into the plurality of compartments.
67. (previously presented) The apparatus of claim 59 wherein the at least one wall forms a predefined shape in the perforated basepipe and comprises at least one of a permeable material, an impermeable material, and combination thereof.
68. (canceled)
69. (previously presented) The apparatus of claim 1 wherein the at least one wall forms a predefined shape and comprises at least one of a permeable portion, an impermeable portion, and combination thereof.
70. (previously presented) The apparatus of claim 1 wherein the first conduit and the second conduit are different lengths within the wellbore.
71. (previously presented) The apparatus of claim 1 wherein the first conduit or second conduit comprises a plurality of sections having a central opening through each of the plurality of sections.
72. (previously presented) The apparatus of claim 1 wherein the first conduit or second conduit is impermeable on at least one end of the first conduit or second conduit.

73. (previously presented) The apparatus of claim 20 wherein the at least one of first selectively perforated basepipe, the second selectively perforated basepipe, and combination is a sand screen.

74. (previously presented) The apparatus of claim 20 wherein the at least one wall forms a specific shape in the first selectively perforated basepipe and comprises at least one of a permeable material, an impermeable material, and combination thereof.

75. (previously presented) The apparatus of claim 20 wherein the first selectively perforated basepipe and the second selectively perforated basepipe are different lengths within the wellbore.

76. (previously presented) The method of claim 36 wherein the at least one wall forms a predefined shape in the first conduit or second conduit and comprises at least one of a permeable section, an impermeable section, and combination thereof.

77. (previously presented) The method of claim 36 wherein the first conduit or second conduit comprises a plurality of sections having a central opening through each of the plurality of sections.

78. (previously presented) The method of claim 36 wherein the first conduit or second conduit is impermeable on at least one end of the first conduit or second conduit.

79. (previously presented) The method of claim 44 wherein the at least one wall forms a shape within the first conduit or second conduit and comprises at least one of a permeable material, an impermeable material, and combination thereof.

80-81. (canceled)

82. (previously presented) The apparatus of claim 1 wherein the at least one permeable section of the first conduit surface and the at least one permeable section of the second conduit surface are offset providing at least one flow direction change for fluids passing from the first flow path to the second flow path.

83. (previously presented) The apparatus of claim 1 wherein the at least one inlet to the compartment is provided by the at least one permeable section of the first conduit surface or the at least one permeable section of the second conduit surface, and wherein the at least one outlet is provided by the at least one permeable section of the second conduit surface or the at least one permeable section of the first conduit surface.

84. (previously presented) The apparatus of claim 1 wherein the at least one compartment includes at least one permeable section of the first conduit, at least one impermeable section of the first conduit, at least one permeable section of the second conduit, and at least one impermeable section of the second conduit.

85. (previously presented) The apparatus of claim 20 wherein the at least one permeable section of the first basepipe and the at least one permeable section of the second basepipe are offset providing at least one flow direction change for fluids passing from the first flow path to the second flow path.

86. (previously presented) The apparatus of claim 20 wherein the at least one inlet to the compartment is provided by the at least one permeable section of the first basepipe or the at least one permeable section of the second basepipe, and wherein the at least one outlet is provided by the at least one permeable section of the second basepipe or the at least one permeable section of the first basepipe.

87. (previously presented) The apparatus of claim 20 wherein the at least one compartment includes at least one permeable section of the first basepipe, at least one impermeable section of the first basepipe, at least one permeable section of the second basepipe, and at least one impermeable section of the second basepipe.

88. (previously presented) A wellbore apparatus comprising:

a) a first flow joint in a wellbore, the first flow joint comprising at least one three-dimensional surface defining a first fluid flow path through the wellbore, at least one section of the first flow joint surface being permeable and at least one section of the first flow joint surface being impermeable;

- b) a second flow joint in the wellbore, the second flow joint comprising at least one three-dimensional surface defining a second fluid flow path through the wellbore, at least one section of the second flow joint surface being permeable and at least one section of the second flow joint surface being impermeable;
- c) at least one wall inside the first flow joint or the second flow joint to form at least a third fluid flow path; and
- d) wherein at least one permeable section of the first flow joint is connected to at least one permeable section of the second flow joint thereby providing at least one fluid flow path between the first flow joint and the second flow joint; and wherein at least one flow joint comprises a sand screen including a wire-wrapped screen wherein the wires of the wire-wrapped screen are wrapped at varying pitches thereby creating varying levels of permeable sections and impermeable sections.

89. (previously presented) A wellbore apparatus comprising:

- a) a first flow joint in a wellbore, the first flow joint comprising at least one three-dimensional surface defining a first fluid flow path through the wellbore, at least one section of the first flow joint surface being permeable and at least one section of the first flow joint surface being impermeable;
- b) a second flow joint in the wellbore, the second flow joint comprising at least one three-dimensional surface defining a second fluid flow path through the wellbore, at least one section of the second flow joint surface being permeable and at least one section of the second flow joint surface being impermeable;
- c) at least one shunt tube in at least one flow joint;
- d) at least one wall inside the first flow joint or the second flow joint to form at least a third fluid flow path; and

e) wherein at least one permeable section of the first flow joint is connected to at least one permeable section of the second flow joint thereby providing at least one fluid flow path between the first flow joint and the second flow joint.

90. (previously presented) A wellbore apparatus comprising;

a) a first selectively perforated basepipe inside a wellbore defining a first fluid flow path through the wellbore, with at least one section of the first selectively perforated basepipe being impermeable and at least one section of the first perforated basepipe being permeable;

b) a second selectively perforated basepipe inside the wellbore defining a second fluid flow path through the wellbore, with at least one section of the second selectively perforated basepipe being impermeable and at least one section of the second perforated basepipe being permeable, wherein the first and second basepipes are eccentric;

c) at least one wall disposed inside and coupled to the first selectively perforated basepipe or the second selectively perforated basepipe to provide at least one additional fluid flow path; and

d) wherein at least one permeable section of the first selectively perforated basepipe and at least one permeable section of the second selectively perforated basepipe are connected to provide at least one flow path between the first selectively perforated basepipe and the second selectively perforated basepipe.

91. (previously presented) A wellbore apparatus comprising;

a) a first selectively perforated basepipe inside a wellbore defining a first fluid flow path through the wellbore, with at least one section of the first selectively perforated basepipe being impermeable and at least one section of the first perforated basepipe being permeable;

b) a second selectively perforated basepipe inside the wellbore defining a second fluid flow path through the wellbore, with at least one section of the second selectively perforated basepipe being impermeable and at least one section of the second perforated basepipe being permeable, wherein the first and second basepipes are adjacent;

c) at least one wall disposed inside and coupled to the first selectively perforated basepipe or the second selectively perforated basepipe to provide at least one additional fluid flow path; and

d) wherein at least one permeable section of the first selectively perforated basepipe and at least one permeable section of the second selectively perforated basepipe are connected to provide at least one flow path between the first selectively perforated basepipe and the second selectively perforated basepipe.

92. (previously presented) The apparatus of claim 23 wherein the first selectively perforated basepipe and the second selectively perforated basepipe are connected with flexible tubes.

93. (previously presented) A wellbore apparatus comprising;

a) a first selectively perforated basepipe inside a wellbore defining a first fluid flow path through the wellbore, with at least one section of the first selectively perforated basepipe being impermeable and at least one section of the first perforated basepipe being permeable;

b) a second selectively perforated basepipe inside the wellbore defining a second fluid flow path through the wellbore, with at least one section of the second selectively perforated basepipe being impermeable and at least one section of the second perforated basepipe being permeable, wherein the first and second basepipes are eccentric;

c) at least one shunt tube in the first selectively perforated basepipe or the second selectively perforated basepipe;

d) at least one wall disposed inside and coupled to the first selectively perforated basepipe or the second selectively perforated basepipe to provide at least one additional fluid flow path; and

e) wherein at least one permeable section of the first selectively perforated basepipe and at least one permeable section of the second selectively perforated basepipe are connected to provide at least one flow path between the first selectively perforated basepipe and the second selectively perforated basepipe.

94. (previously presented) A method for completing a wellbore comprising:

- a) providing a wellbore apparatus for producing hydrocarbons comprising a first flow joint in a wellbore, the first flow joint comprising at least one three-dimensional surface defining a first fluid flow path through the wellbore with at least one section of the first flow joint surface being permeable and at least one section of the first flow joint surface being impermeable, a second flow joint in a wellbore, the second flow joint comprising at least one three-dimensional surface defining a second fluid flow path through the wellbore with at least one section of the first second flow joint surface being permeable and at least one section of the first second flow joint surface being impermeable, at least one wall disposed in the first flow joint or the second flow joint to form at least a third fluid flow path, wherein at least one permeable section of the first flow joint is connected to at least one permeable section of the second flow joint thereby providing at least one fluid flow path between the first flow joint and the second flow joint;
- b) disposing at least one shunt tube in at least one of the first conduit and the second conduit;
- c) installing the wellbore apparatus in the wellbore; and
- d) gravel packing the wellbore using the shunt tube in the first conduit or the second conduit.